

### REMARKS

Favorable reconsideration of this application, in view of the present amendments and in light of the following discussion, is respectfully requested.

Claims 27-54 are pending, Claims 27-31, 34, 40-44, 47, 51 and 53 are amended and Claim 54 is newly added. No new matter is introduced.

In the outstanding Office Action, Claims 27-53 were rejected under 35 U.S.C. §112, second paragraph; Claims 27 and 29-34, 37, 38 and 53 were rejected under 35 U.S.C. §103(a) as being unpatentable over Chen et al. (Pub. No. WO 2004/016037, hereafter “Chen”) in view of Addeo et al. (U.S. Patent No. 5,335,011, hereafter “Addeo”); Claim 28 was rejected under 35 U.S.C. §103(a) as being unpatentable over Chen, Addeo and Gollmar et al. (U.S. Patent No. 4,901,354); Claim 35 was rejected under 35 U.S.C. §103(a) as being unpatentable over Chen, Addeo and Butler et al. (U.S. Patent No. 6,474,816); Claim 36 was rejected under 35 U.S.C. §103(a) as being unpatentable over Chen, Addeo and Nestorovic et al. (U.S. Publication No. 2004/0155186); Claims 39, 40, 42-47 and 50-52 were rejected under 35 U.S.C. §103(a) as being unpatentable over Chen, Addeo and Warrent (U.S. Patent No. 7, 013,009); Claim 41 was rejected under 35 U.S.C. §103(a) as being unpatentable over Chen, Addeo, Warren and Gollmar; Claim 48 was rejected under 35 U.S.C. §103(a) as being unpatentable over Chen, Addeo and Butler; and Claim 49 was rejected under 35 U.S.C. §103(a) as being unpatentable over Chen, Addeo, Warren, Butler, and Nestorovic.

Initially, Applicants wish to thank Examiner Phan for the courtesy of a personal interview conducted with Applicants’ representatives on May 17, 2011. During the interview, the outstanding issues in this case were discussed as summarized herein below and

in the Interview Summary, which the Examiner has made of record. No agreement was reached pending further search by the Examiner.

In reply to the rejection of Claims 27-52 under 35 U.S.C. §112, second paragraph, it is respectfully submitted that the claim amendments made herein render the rejection moot. Accordingly, it is respectfully requested that the rejection of Claims 27-52 under 35 U.S.C. §112 be withdrawn.

In reply to the rejection of Claims 27 and 29-34 as being anticipated by Chen and Addeo, amended Claim 27 recites, *inter alia*, a system for acoustical communication that includes:

a transmitter configured to transmit the one or more captured voice signals to one or more external electronic devices

a control module configured to adjust directional dependence of at least a first directionally dependent microphone of the plurality of directionally dependent microphones based on the one or more voice signals captured by the first directionally dependent microphone and at least a second directionally dependent microphone of the plurality of directionally dependent microphones,

wherein the second directionally dependent microphone is located on an ear engaging portion of the eyeglass frame.

Turning to the primary reference, Chen describes an audio system for improving the intelligibility of speech.<sup>1</sup> More specifically, Chen describes four microphones (1-4) wherein microphone (1) and microphone (4) are located in the corners near hinges (203) of a pair of spectacles.<sup>2</sup> Chen also describes that microphone (2) and microphone (3) are located closer to the corner of the lenses and near to a bridge portion (202).<sup>3</sup> Chen further describes placing

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<sup>1</sup> Chen at page 1, lines 5-10.

<sup>2</sup> Id. at page 14, lines 13-21; See Figure 1.

<sup>3</sup> Id.

the microphones (1-4) along a portion of the spectacles for disposition transverse to the brow of the user to conform to normal human listening habits of looking towards the source of the sound.<sup>4</sup> In addition, Chen describes that signals received by microphones (1-4) are subjected to processing by a beam-former (105).<sup>5</sup> Chen also describes a signal processing device (10), a multiple-pin jack (8) and plug (9).<sup>6</sup>

Chen, however, does not describe that microphones (1-4) are directionally dependent microphones. Instead, Chen merely describes that signals received by microphones (1-4) are subjected to processing by a beam-former (105).<sup>7</sup> Conversely, Claim 1 recites *a first and second directionally dependent microphone*.

Further, Chen does not describe a transmitter configured to transmit one or more captured voice signals to one or more external electronic devices. Instead, Chen merely describes a physical cable connection between the spectacles and the signal processing device (10) via a multiple-pin jack (8) and plug (9).<sup>8</sup> Nowhere does Chen describe transmitting the one or more captured voice signals wirelessly.

Chen also does not describe that the second directionally dependent microphone is located on an ear engaging portion of the eyeglass frame.

Instead, Chen describes that microphone (1) and microphone (4) are located in the corners near the hinges (203) of a pair of spectacles and that microphone (2) and microphone (3) are located closer to the corner of the lenses and near to a bridge portion (202) of the

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<sup>4</sup> Id. at page 16, lines 1-19.

<sup>5</sup> Id. at page 19, lines 9-28; See Figure 2.

<sup>6</sup> Id. at page 14, lines 13-21; See Figure 1.

<sup>7</sup> Id. at page 19, lines 9-28; See Figure 2.

<sup>8</sup> Id.

spectacles.<sup>9</sup> In other words, Chen describes placing the microphones (1-4) along a portion of the spectacles for disposition transverse to the brow of the user.<sup>10</sup> Nowhere does Chen describe that any of the microphones (1-4) are located on an ear engaging portion of the spectacles. In fact, Chen teaches away from such a microphone placement in that Chen describes placing the microphones (1-4) along a portion of the spectacles for disposition transverse to the brow of the user to conform to the user looking towards the direction of the sound.

Conversely amended Claim 27 recites that *the second directionally dependent microphone is located on an ear engaging portion of the eyeglass frame*. Therefore, Chen fails to describe the advantageous features of the placement of the microphones of the present invention such that the one or more voice signals can be interpreted by the control module to make adjustments for better allowance for the physiognomy of the user.<sup>11</sup>

Therefore, for the above-noted reasons, Chen fails to describe the system for acoustical communication of amended Claim 27 and Addeo fails to cure these deficiencies in Chen. As such, no combination of Chen and Addeo describes every feature recited in Claim 27. Accordingly, amended Claim 27, together with any claims depending therefrom, is believed to be in condition for allowance for this additional reason.

As all other rejections of record rely upon Chen for describing the above-noted features, and the above-distinguished features are not disclosed or suggested by Chen, alone or in combination with any other art of record, it is respectfully submitted that a *prima facie*

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<sup>9</sup> Id. at page 16, lines 1-19.

<sup>10</sup> Id.

<sup>11</sup> Ritter et al. (U.S. Publication No. 2007/0160254).

case of obviousness has not been presented. Accordingly, it is respectfully requested that the rejection of Claims 27-53 under 35 U.S.C. § 103(a) be withdrawn.

Further, new Claim 54 recites, *inter alia*, the system for acoustical communication wherein:

the control module adjusts *a position of at least the first directionally dependent microphone* based on the one or more voice signals captured by the first directionally dependent microphone and at least a second directionally dependent microphone of the plurality of directionally dependent microphones.

The outstanding Office Action acknowledges that Chen fails to describe adjusting the position of at least one directionally dependent microphone as recited new Claim 53 but asserts Addeo as curing this deficiency in Chen.<sup>12</sup> Addeo describes an audio system for use in a teleconferencing system.<sup>13</sup> More specifically, Addeo describes that a microphone array (150) includes a plurality of microphones (151-1 to 159-1) each having a respective fixed volume zone (151-159).<sup>14</sup> Addeo also describes that a microphone array control device (160) scans each volume zone (151-159) by forming a highly direction beam in each volume zone (151-159) and that if a sound is detected in a particular volume zone (151-159), the microphone array control device (160) causes the microphone array (150) to maintain a beam in that particular zone thereby lowering the volume in other volume zones (151-159).<sup>15</sup>

The outstanding Office Action identifies the “self-steering microphone arrays” of Addeo as describing the “control module adaptively adjusting the position of at least one first directionally dependent microphone based on the voice signals captured by at least one

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<sup>12</sup> Outstanding Office Action at page 4, lines 3-6.

<sup>13</sup> Addeo at page column 1, lines 24-26.

<sup>14</sup> Id. at column 4, line 60 to column 5, line 51.

<sup>15</sup> Id.

second directionally dependent microphone” recited in Claim 1. However, Addeo does not describe that the microphone array control device (160) adjusts the position of the of one microphone (151-1) based on the voice signals detected in a particular volume zone (151-159) by a second microphone (157-1).

Instead, Addeo merely describes scanning each volume zone (151-159) by forming a highly direction beam in each volume zone (151-159) and if a sound is detected in a particular volume zone (151-159), the microphone array control device (160) causes the microphone array (150) to maintain a beam in that particular zone thereby lowering the volume in other volume zones (151-159).<sup>16</sup> In other words, Addeo merely describes maintaining the highly directional beam in one volume zone (151) when sound is detected to drown out ambient noise rather than actually changing the position of a microphone (151-1 to 151-9). Nowhere does Addeo describe changing the *position* of a microphone (151-1 to 151-9), much less changing the position based on the voice signals detected by a second microphone (151-9).

Conversely new Claim 54 recites that the control module *adjusts the position of the at least one first directionally dependent microphone based on the voice signals captured by at least one second directionally dependent microphone*. Therefore, Addeo fails to describe the control module of new Claim 54 and no combination of Chen and Addeo describes every feature recited in Claim 45. Accordingly, new Claim 54 is believed to be in condition for allowance.

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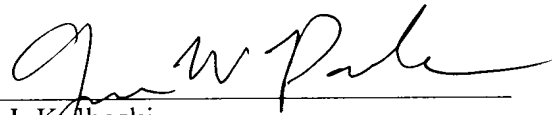
<sup>16</sup> Id.

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Reply to Office Action of March 28, 2011

For the reasons discussed above, no further issues are believed to be outstanding in the present application and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance for Claims 27-54 is earnestly solicited.

Respectfully submitted,

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